

**STENOLECHIA BATHRODYAS MEYRICK, A RECENTLY
INTRODUCED PEST OF ORNAMENTAL CONIFERS
IN SOUTHERN COASTAL CALIFORNIA
(LEPIDOPTERA: GELECHIIDAE)**

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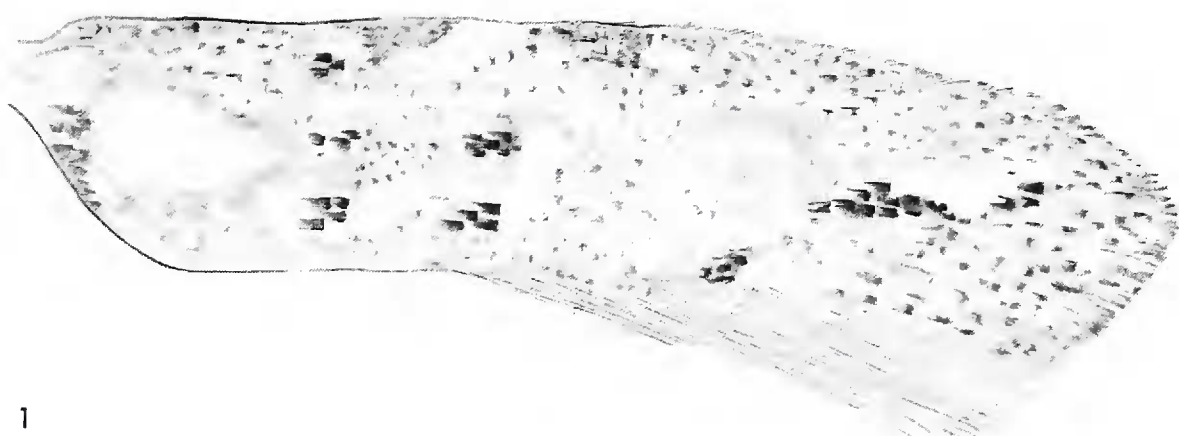
On July 31, 1969 a few adult specimens of a small gelechiid from Pacific Palisades, Los Angeles County, California collected on *Juniperus sabina* L. var. *tamariscifolia* Ait. (savin) were submitted to the Insect Taxonomy Laboratory in Sacramento for identification. Specimens from La Jolla, San Diego County on *Juniperus* sp. were sent to the laboratory on September 22, 1976. Following both submissions, specimens were referred to R. W. Hodges, Systematic Entomology Laboratory, U.S.D.A., Washington, D.C., who advised that it was a species unknown to him.

On February 28, 1977 and again on April 26, 1977, samples of *Cupressocyparis leylandii* (hybrid of Monterey cypress and Alaska cedar) and *Cupressus* sp. (CDFA rearing lots #133 and #141 respectively) from La Jolla were sent to Sacramento, with adults commencing emergence on March 28, 1977 and June 13, 1977 respectively. Adults were reared on August 31, 1977 from *Juniperus* sp. collected from Ventura, Ventura County.

On March 13, 1978 K. Sims submitted infested *Juniperus* spp. (Lot #154) from Pacific Beach and La Jolla with the comment that the insect had become an increasing problem in the past two years and was causing extensive damage. Adults from this material emerged in April. Sims also reported seeing similar damage to Italian cypress in the same areas (in litt.).

Infested juniper was forwarded from San Diego, July 20, 1978; several adults emerged in late August (Lot #165). The latest material received was a sample of larvae from a household planting of juniper in San Diego on February 20, 1980.

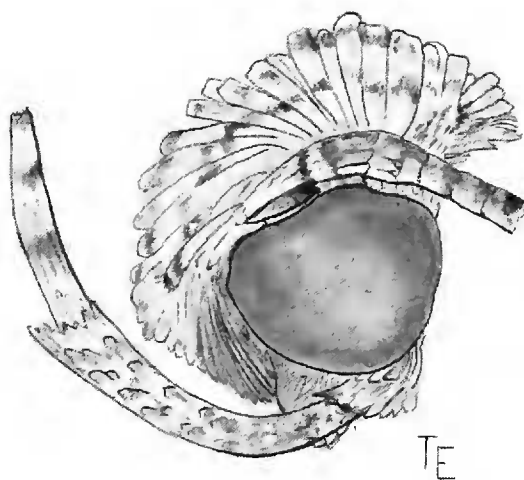
After prolonged inquiry and search, I found in Clarke (1969, pl. 193) illustrations of *Stenolechia bathrodyas* Meyrick, which were similar to California specimens in wing pattern, size, and male genitalic morphology. More detailed information was obtained from Okada (1962), including a host association with *Juniperus chinensis* (Antoine). Comparisons of the male genitalia with that of the type of *S. bathrodyas* and with drawings in Okada's paper confirmed that the two are conspecific or very near, the major difference being that the valva of the Japanese specimens appears to be relatively



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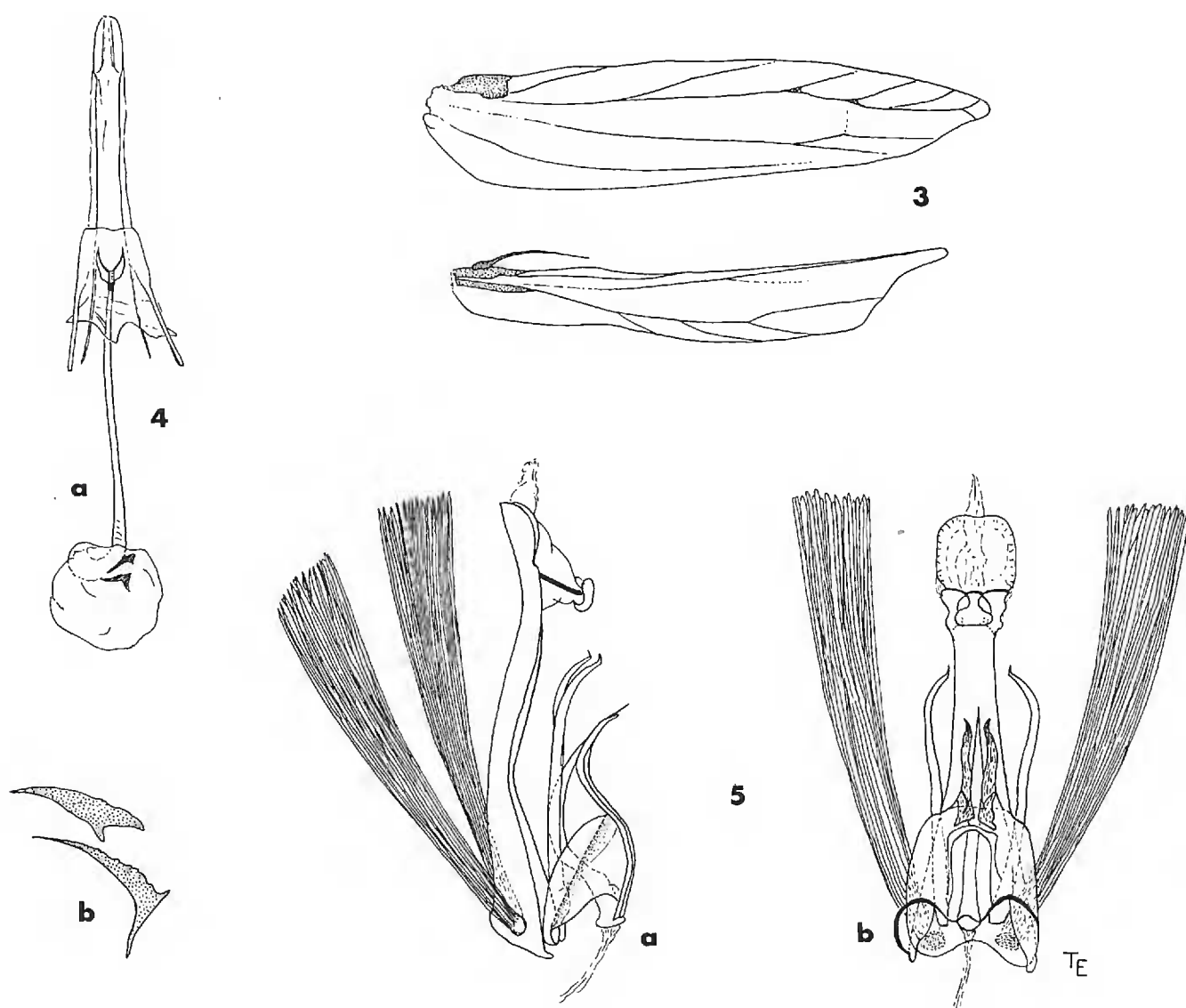


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Figs. 1-2. *Stenolechia bathrodyas*. Fig. 1, fore- and hindwing patterns. Fig. 2, head with scales, lateral view.

longer than in the California specimens. I have concluded that the valva length must be variable and that the California population has resulted by introduction of *S. bathrodyas* from Japan, probably on imported infested host material.

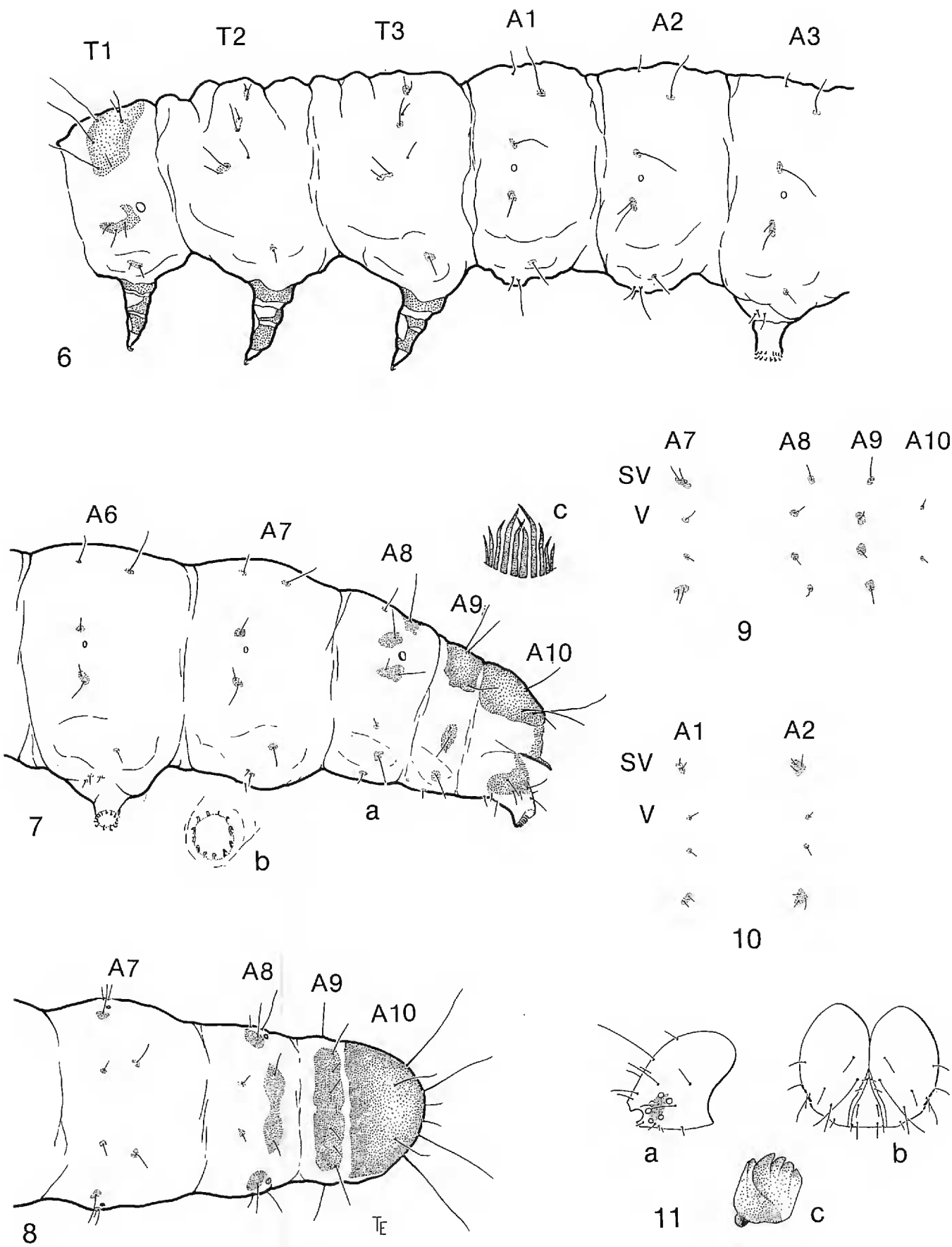
The discovery of this introduced pest resulted from the keen observations,



Figs. 3–5. *Stenolechia bathrodyas*. Fig. 3, venation of fore- and hindwings. Fig. 4a, female genitalia, ventral view; b, closeup view of signa. Fig. 5, male genitalia; a, lateral view; b, ventral view.

persistence and cooperation of K. Sims, San Diego County Department of Agriculture and V. Lazareo, County Farm Advisor, San Diego County. Thanks are extended to J. A. Powell, University of California, Berkeley and K. Sattler, British Museum (Natural History), London, for comparing types of Gelechiidae, and the latter for reviewing Meyrick's type of *Stenolechia bathrodyas*. I greatly appreciate the prompt cooperation of K. Yano, Yamaguti University, Japan. Translation services were provided by C. Lai, Plant Pathologist, and finishing touches were put on the illustrations by C. S. Papp, Entomologist; both of Laboratory Services, California Department of Food and Agriculture, Sacramento.

The following description is based entirely on specimens from the coastal California locations.



Figs. 6–11. Larva of *Stenolechia bathrodyas*. Fig. 6, thorax and A1–A3, lateral view. Fig. 7a, A6–A10, lateral view; b, closeup view of crochets; c, closeup, ventral view of anal comb. Fig. 8, A7–A10, dorsal view. Fig. 9, SV and V setal arrangement for A7–A10. Fig. 10, SV and V setal arrangement for A1 and A2. Fig. 11, larval head structures; a, lateral view; b, front view; c, mandible.

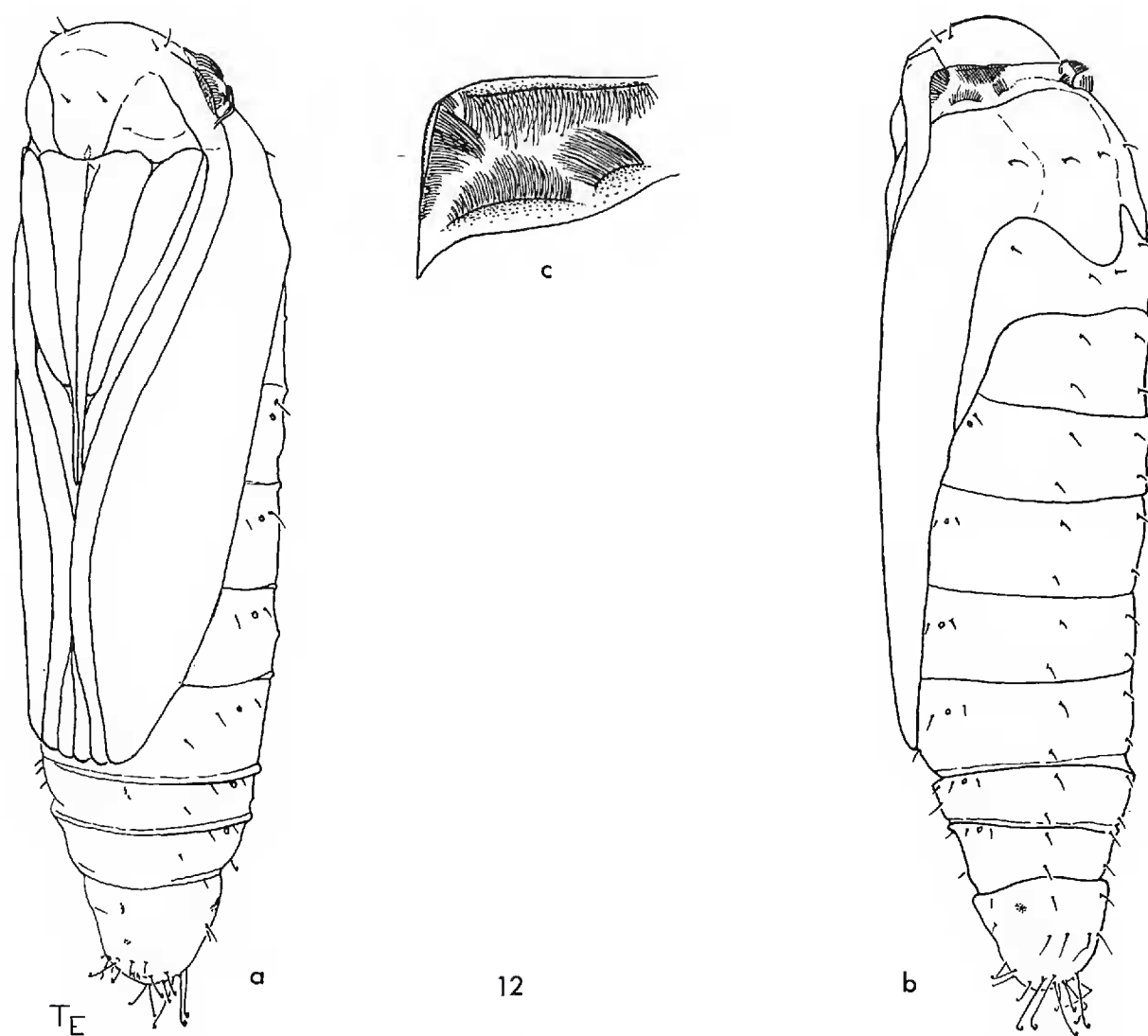


Fig. 12. Pupa of *Stenolechia bathrodyas*; a, lateroventral view; b, laterodorsal view; c, closeup of left side of pronotum.

Stenolechia bathrodyas Meyrick
(Figs. 1–12)

Adult.—Forewing length 2.8–3.0 mm. Head (Fig. 2): Light yellow-brown, some dark gray spotting on scales; front brown laterally and onto proboscis; labial palpus with first and second segments laterally mostly dark brown, third segment with two encircling dark brown bands; antenna with dark gray bands on each segment dorsally. Thorax yellow-brown with scales brown apically. Forewing (Fig. 1) mostly yellow-brown with many scales brownish apically, areas of white around most dark spots; several variable, dark gray, irregular spots as figured, with apical dash being largest. Hindwing pale gray with many dark gray-tipped scales; fringe paler. Venation as in Figure 3; some variation in degree of reduction of some veins among individuals. Abdomen light yellow-brown, lustrous; males with two pairs of long yellow-brown scale tufts (coremata) dorsally, one pair issuing from two eversible sacs near base of genital capsul and one pair on base of tegumen of genitalia.

Legs mostly dark gray with light yellow-brown at base and apex of segments; tarsi dark gray, ringed with light yellow-brown at joints; hindtibia with setaceous, light yellow-brown tuft along entire dorsal edge, spurs dark gray. Male genitalia (Fig. 5) and female genitalia (Fig. 4) as illustrated.

Larva (Figs. 6–11).—Mature living specimens 5.5–6.0 mm in length, generally green; head brownish yellow with dark area between ocelli (head dark on earlier instars); thoracic legs, prothoracic shield, most dorsal pinacula, and anal shield dark, contrasting. Abdominal segment nine dorsally with broad, dark, elongate sclerite including setae D1, D2 and SD1, varying from being slightly constricted to nearly divided along middorsal line; three lateral setae on common pinaculum. Abdominal segment eight with pinacula of D2 setae usually contiguous, forming elongate, irregular, dark sclerite; SD1 dorsoanterior to spiracle, with relatively large pinaculum; other pinacula small, paler. SV setal formula: 2,3,2,1,1 for those specimens examined. Crochets number approximately 10–14, uniordinal, arranged in a complete circle. Posterior region of larva minutely but fairly densely spinose; anal fork tortricoidlike with 10 prongs, the central pair being crossed apically, pairs of different lengths with shortest prongs laterally.

Pupa (Fig. 12) as illustrated, brownish yellow.—Length about 3 mm. Pronotum laterally with unusual area (Fig. 12c), consisting of medial concavity nearly surrounded by four, somewhat arched ridges of differing lengths, each thickly covered on dorsal edge with setaceous scales directed toward concavity; function unknown. No true cremaster but with several hooked setae of various lengths posteriorly.

Deposition of voucher specimens: British Museum (Natural History), London; California Department of Food and Agriculture, Sacramento; California Academy of Sciences, San Francisco; California Insect Survey, University of California, Berkeley; Los Angeles County Museum of Natural History; National Museum of Natural History, Washington, D.C.

Host plants.—Various species and hybrids of *Cupressus* and *Juniperus*.

Distribution.—Japan: Tokyo to Osaka (Esake et al., 1969). North America: California, Ventura to San Diego.

Biology.—The available collection data suggest there are at least three generations per year. This agrees with Osaka (1962), who states that the species in Japan is trivoltine with adults present in April, June and August into September. Larvae have been found in Japan in March, May and July. From the California localities, adults were reared out at approximately the same periods. The shortest duration for a single generation appears to be about 90 days, occurring during the warmer months.

The slow moving larva feeds through the leaves but apparently does not bore into the twigs, except perhaps in the growing tips. They migrate externally, leaving behind silk strands and producing webbing between twigs. Heavy infestation by this pest results in whole branches or sections of the

plant becoming brown, resembling the effects of some plant diseases. Pupae were found in very thinly prepared cocoons of silk, covered with frass, small wood chips and pieces of leaves at the juncture of two twigs, or the juncture of a twig and a branch, or concealed under an old leaf on a branchlet.

The genus *Stenolechia* Meyrick, until now, was found in central Europe, and eastern and southeastern Asia, where some species are known to be conifer feeders. For a comparison of the larval and pupal structures of the central European species, see Patočka (1977). In North America *Stenolechia* most closely resembles the genus *Recurvaria* Haworth. The two genera differ primarily in details of the genitalia and immature stages. At present, *S. bathrodyas* has not been detected in native stands of cypress or juniper, but only in ornamental plantings. This gelechiid would have to be considered a potentially destructive pest to native species and to nursery operations.

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